

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
9 June 2005 (09.06.2005)

PCT

(10) International Publication Number  
**WO 2005/052582 A3**

(51) International Patent Classification<sup>7</sup>: **G01N 33/543**

(21) International Application Number:  
**PCT/EP2004/013526**

(22) International Filing Date:  
**29 November 2004 (29.11.2004)**

(25) Filing Language:  
**English**

(26) Publication Language:  
**English**

(30) Priority Data:  
**03447276.1 28 November 2003 (28.11.2003) EP**

(71) Applicant (*for all designated States except US*): **PAM-GENE B.V. [NL/NL]; Nieuwstraat 30, NL-5211 NL 's-Hertogenbosch (NL).**

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **BLOK, Herman, Jacobus [NL/BE]; Hobrugstraat 15, B-2470 Retie (BE). VAN DAMME, Hendrik, Sibolt [NL/NL]; v.d. Weeghensingel 5, NL-5212 PH Den Bosch (NL). INGHAM, Colin, John [GB/NL]; Brakelseweg 46, NL-6707 DW Wageningen (NL). HILHORST, Maria, Helena [NL/NL]; Diedenweg 163A, NL-6706 CP Wageningen (NL).**

(74) Agents: **DE CLERCQ, Ann et al.; De Clercq, Brants & Partners CV, E. Gevaertdreef 10A, B-9830 Sint-Martens-Latem (BE).**

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— *of inventorship (Rule 4.17(iv)) for US only*

Published:

— *with international search report*  
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:  
**28 July 2005**

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**WO 2005/052582 A3**

(54) Title: **METHODS AND APPARATUS FOR CELL BASED MICROARRAY ASSAYS**

(57) Abstract: The present invention relates methods for screening of cellular responses comprising: (a) providing a solid porous support having first and second surfaces and at least one area with a plurality of through-going channels (b) providing cellular components on said first and/or second surface of said solid porous support, wherein said solid porous support retains said cellular compounds on its surface; (c) providing a supply chamber at said first and/or second surface and opposite to said cellular components (d) subjecting all or part of said cellular components to one or more effectors; wherein at least one effector is delivered from said supply chamber through the porous support; (e) incubating the said all or part of cellular components with said effectors under conditions allowing the induction of cellular responses in the said all or part of cellular components; (f) optionally providing detector molecules to the said all or part of cellular components for assaying cellular responses (g) assaying for cellular responses; and, (h) identifying and characterizing the cellular responses induced by said effector molecules. The present invention further relates to the uses of said methods and apparatuses for carrying out said methods as well as to the use of a porous support for the preparation of a microarray kit for carrying out said methods.